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Mary Jo Potter and Rick Wesslund

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investing in innovation

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Mary Jo Potter
Rick Wesslund



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As health systems begin to explore opportunities to move into the realm of venture capital, they can benefit from the lessons learned from corporations and other health systems that have experience with such a strategy.

Disruption has become a common and well-accepted idea in the healthcare industry: The question is no longer *if* but *how* and *when* it will occur. The industry's response to disruption has been varied, with providers and payers developing corporate strategies that embrace innovation. This shift has impelled dozens of large and small health systems to make forays into the world of venture capital—the traditional source of funding for disruptive business ideas.

In 2015, according to Thomson Reuters data published by PwC, corporate venture groups invested \$7.5 billion in 905 deals to fund startups, accounting for 13 percent of all venture capital dollars and 21 percent of all deals—a level not seen since the dot-com bubble.^a The Thomson Reuter data indicated that in that year, health care accounted for about 20 percent of the total venture capital market.

Corporations as diverse as Eli Lilly, Coca-Cola, General Mills, and Walgreens now complement their corporate research and development with investments in promising startups. Health care is proving no different, with leading provider systems sponsoring major ventures. Examples include Mayo Clinic Ventures (sponsored by Mayo Clinic, Rochester, Minn.), Partners Innovation Fund (founded by Brigham and Women's Hospital and Massachusetts General Hospital, Boston), the Flare Capital Partners (the Cleveland Clinic's fourth venture fund), and Ascension Ventures (with multiple health system sponsors), which has \$550 million in capital under management. Recently, the Falls Church, Va.-based Inova

AT A GLANCE

As health systems continue to embrace disruptive innovation, they are increasingly likely to consider making a move into venture capital. Working in venture capital can benefit a health system in several ways, including:

- > Allowing it to operate outside of bureaucracy and align projects with its core values
- > Encouraging innovation within the organization
- > Enabling it to respond quickly to changes in the market

a. "Corporate Venture Investment to Entrepreneurial Ecosystem Hits Fifteen Year High in 2015," National Venture Capital Association, Jan. 19, 2016.

Health System joined the venture capital field announcing the formation of a \$100 million venture fund dedicated to investment in precision medicine startups. All told, more than 40 healthcare provider systems have started their own venture funds or are participating as limited partners in firms managed by others.

The provider segments' response to the rising tide of venture capital has been varied. Results of a recent informal survey based on interviews with 22 market-leading not-for-profit provider organizations with venture capital funds, and a sprinkling of the leading independent venture capital firms, are telling.

At one end of the spectrum, a number of large health systems are approaching investments as such organizations might approach any asset class diversification: They have formed separate organizations, led by industry professionals, whose purpose is to identify healthcare startups offering products that can be readily incorporated into the larger health system's core business operations. Examples include Ascension in St. Louis and Providence Health & Services in Renton, Wash., the latter having launched a \$150 million venture capital fund in 2014.

It's a fine line, but the measures of success for these types of investors appear to be primarily financial and secondarily strategic. Most interviewees indicated, however, that their investments are designed to help their owners see and respond to disruptions in the marketplace faster than competitors, and almost all are interested in startups or early-stage companies with the ability to scale.

"We are as interested in business model disruptions as we are in new products or services," says Aaron Martin, head of Providence Ventures—the fund that supports Providence Health & Services.

"Our priority is bringing internal or external innovations to our delivery system to test, refine, and scale." Martin adds: "We value our innovation activities because they keep us abreast of market disruptions. We can provide a beta environment for entrepreneurs and potentially be a large customer for the new product of services they are inventing."

Providence Ventures plans to target early- to mid-stage companies in six core areas:

- > Online primary care access
- > Care coordination and patient engagement
- > Chronic disease management
- > Clinician experience, data analytics
- > Consumer health and wellness

At the other end of the spectrum, other large health systems are using their resources to leverage internally developed intellectual property and commercialize those business ideas where appropriate. An example is Mayo Clinic and its Mayo Capital Partners, which has been in the venture capital business for many years. The measures of success for such health systems are returns to the organization and inventors, as well as scaling ideas for industry impact.

The bulk of the others in the interview sample appear to focus more heavily on strategic investing, using their resources to evaluate new products and services that are mainly developed externally. Their measures of success are more difficult to categorize. Each of these venture capital operations recognizes the need for a financial return to continue to fund its operations, but each also is primarily interested in finding the next disruption or breakthrough that will improve internal operations. The venture capital operations require a deep engagement of the parent organization with the startups, and a close tie to the overall strategy and structure of the organization.

Whether the objective of these corporate ventures groups is financial, strategic, or a combination, all but one of the organizations interviewed identified collaboration and coinvesting as essential to their success. Only a few groups actually take the lead in their deals, with most engaging external venture groups in the sourcing, due diligence, and contracting process.

Most of the internal venture capital groups consist of four to 10 people, which one interviewee suggested has encouraged “coopetition” rather than competition with other provider investors because the groups are too small to handle all the usual due diligence involved in venture capital investments.

Alignment of the goals of these venture capital operations across the startup investments, the parent company, and the venture capital partners enables the startups to draw on the expertise of the parent company, and makes it easier for the adoption and scaling of the startup to the core healthcare business. As Matt Hermann, senior managing director of Ascension Ventures explains, “We are looking to help the industry standardize and systematize processes and tasks for efficiency and effectiveness.”

Ascension Ventures is now on its third investment fund, having made investments in 54 companies. It started in 1999 with a \$125 million allocation off the system balance sheet to get started. The first fund took about six years to invest. Originally, Ascension invested on its own, but it attributes its success to having had the foresight to commit enough capital to hire high-quality individuals and to set up a separate governance structure. When Ascension closed its second fund (valued at \$200 million) in 2007, it reached out to other Catholic systems so that by 2012, with its third fund (valued at \$225 million),

it extended its limited partner base to include other like-minded systems.

The Rationale for Corporate Venturing

The potential lure of big payoffs from getting in on the ground floor of new startups is certainly a factor to consider in organizing a dedicated group to focus on direct and indirect healthcare investments. The interview findings indicate, however, that most provider investors see themselves less as financial investors focused on revenue diversification (although the bottom line was always a factor) and more as strategic investors for long-term value enhancement and access to new innovations and business disruptions. The survey identified three compelling reasons why developing a corporate venture activity is attractive for most large health systems.

Improved response to market disruptions. With the exception of academic medical centers, which receive billions for basic research, large provider organizations have few designated research and development functions. For this reason, these organizations often cannot respond quickly to disruptive changes in technologies or business models. Venture investments—particularly those aimed at improving patient care—can allow the provider to see, understand, and rapidly respond to new developments outside of the normal business silos. Health systems that don’t get into the innovation game risk missing out on care-delivery disruptions in the next few years. This risk is particularly acute in the area of patient care, where large corporations increasingly expect providers to leverage new technology to meet enhanced customer-service goals.

Means to foster a culture of innovation and to obtain a “transient advantage.” A venture program that is aligned with organizational strategy can provide opportunities for encouraging and accelerating change in new markets, and for enabling health

systems to adapt what one interviewee describes as a strategy of “transient advantage.”

This strategy involves investing in new business initiatives that can be brought to market quickly to maximize customer benefit, and then disengaging from them when business cycles start trending downward. Blue Shield of California, for example, is cooperating with providers on experiments where the primary goal is to achieve innovation rather than to obtain a financial return. Through these efforts, Blue Shield also expects to augment activities in its own organization to cause innovation to occur. Lisa Suennen, president of the Northern California business advisory firm Venture Valkyrie, suggested that venturing and “creating a culture of innovation is easier in the not-for-profit world because it doesn’t face the same quarterly pressures of the for-profit world.”

Ability to create leverage. Although the impact of any single investment may move the needle only a little, provider venture capital firms often find leverage by investing as a group—one of the benefits of cooperation in the normally competitive provider market. This cooperation not only can magnify the impact of investments but also can reduce risk, which is an important benefit in situations where the scientific or technological uncertainty of the startup is high.

Venture Capital Approach Options

Providers investing in healthcare technology and service companies employ a variety of investment approaches. The models are not mutually exclusive. Some organizations take a multifaceted venturing approach. More conservative providers may limit themselves to investing in funds.

It should be noted that an array of corporations outside of health care have invested billions to launch their own venture capital groups to invest

in the industry and have so far met limited success. Given this caution, there are lessons to be learned from the various investment approaches.

Healthcare accelerators or “incubators.” These approaches promote the growth of healthcare technology largely from externally developed startups. Healthbox, Rock Health, and Blueprint Health are examples drawing investments from the respective healthcare organizations Intermountain Healthcare (Salt Lake City), Mayo Clinic (Rochester, Minn.), and Humana (Louisville, Ky.). Intermountain and Healthbox, which have been long time collaborators, recently announced the funding for a \$35 million Intermountain Innovation Fund, with Intermountain providing the capital and Healthbox serving as the general partner, focused exclusively on external startup opportunities. These accelerators and incubators provide the opportunity for coinvesting (even sophisticated providers, as previously noted, are rarely lead investors), a chance to network with peer group executives, and the potential for cobranding of new technologies.

Innovation centers and “foundries.” These are in-house efforts designed to encourage innovations and generate revenue from internal intellectual property. Such innovation programs can include the commercialization of internal ideas, such as Intermountain Precision Genomics for Cancer, where a medical group inside Intermountain Healthcare received funding from its innovations group, which allowed it to partner with technology companies in its market to refine its use of genomics in the treatment of cancer patients and to deliver service to external markets. In addition to commercial innovations, Intermountain has a “foundry” group which can support the development of clinical innovations, and provide a means of embedding them in the health systems’ operations.

PROVIDER INVESTMENTS IN INNOVATIONS

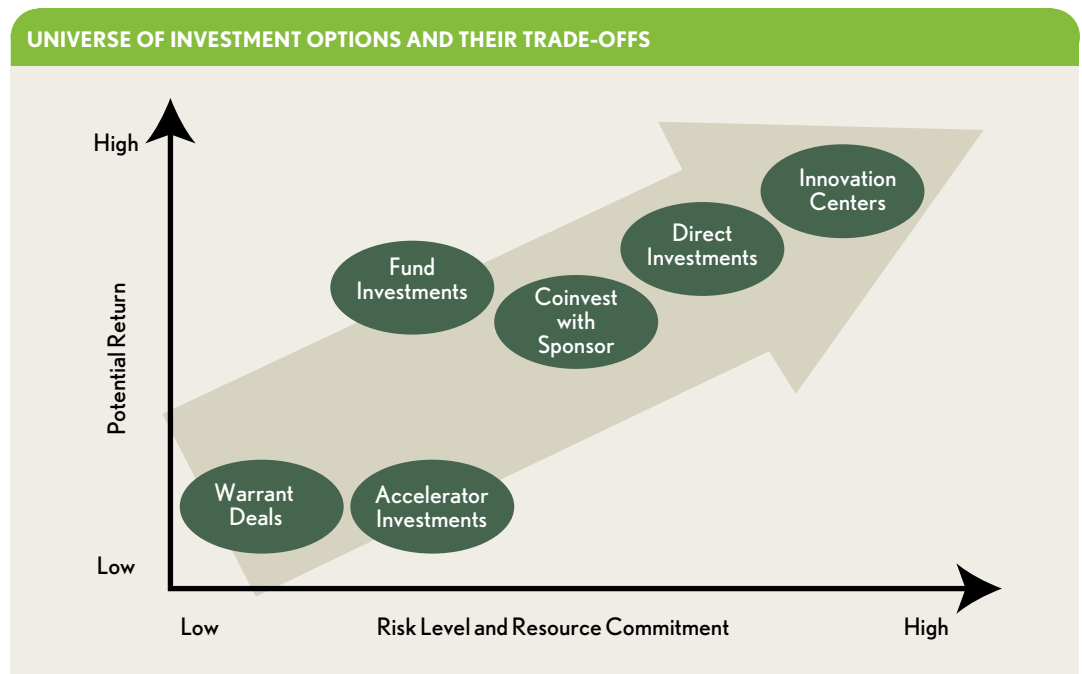
Company Name	Core Business Description	Market Innovation/ Disruption	Provider/ Venture Capital Involvement	Results
Shared Clarity (Dignity Health)	SharedClarity aggregates and integrates device data, registry data, claims history, and supportive clinical information to aid providers in making informed decisions on effective medical devices.	SharedClarity's membership and clinical methodology model supports sourcing strategies that can lead to improved patient outcomes, enhanced patient satisfaction, reduced readmissions, and lower costs for medical devices.	SharedClarity was originally developed by Dignity Health and UnitedHealthcare. Advocate Health Care, Baylor Scott & White Health, and McLaren Health Care have joined as subsequent members.	To date, SharedClarity has completed clinical reviews on a number of device categories. One member has reported savings in excess of 40 percent over historic purchasing.
Nevro (Mayo Clinic)	Nevro is a medical device company that has developed innovative therapy based on a neuro-modulation platform for the treatment of chronic pain.	Spinal cord stimulation delivers electrical pulses to the spinal cord to mask or interrupt the transmission of abnormal pain signals to the brain. The Nevro solution provides relief for both back and leg pain without tingling, buzzing, or unexpected shock during normal body movement activities.	Funding was provided by Mayo Clinic from both internal seed funds (technology advancement) and equity investment funds (company growth and scalability).	Company IPO in 2014; current market cap of \$1.7 billion.
QPID Health (Partners HealthCare Innovation)	QPID offers a clinical intelligence software and reasoning platform designed to provide actionable information and clinical insights from patient records.	The product sits on top of electronic health records and generates patient facts from information found anywhere and in any format in longitudinal health records, including structured data fields and unstructured narrative notes.	QPID was spun out by Partners HealthCare Innovation in late 2012; it was developed over 10 years in demanding clinical settings, and has been adopted by leading integrated delivery systems such as Partners, Sutter Health, Sharp HealthCare, and Providence Health & Services.	Acquired by eviCore in 2016 as a strategic investment under undisclosed terms that represent a highly favorable ROI for Partners.
Atigeo, LLC (Ascension Ventures)	Atigeo offers a big data analytics platform with multiple applications.	XPatterns platform ingests data in its native state and rapidly uncovers relevant data connections; a healthcare intelligence suite offers evidence-based medicine, clinical decision support, drug discovery for complex disease, and operational and financial automation.	Ascension Ventures became an equity investment partner in 2015 after tracking company for two years. Ascension Ventures introduced Atigeo to Ascension Health, which has since signed multiyear commercial agreement.	Atigeo's XPatterns platform now serves multiple industries; Ascension Health reports positive results in network management, cost of care and resource utilization, and patient risk evaluation.
Kyruus (Providence Ventures)	Kyruus provides enterprise software solutions that enable hospitals and health systems to optimize the patient experience across all channels of patient access.	Kyruus organizes physician provider data and informs better matching of patient to providers across all channels of access: digital, call center, and in clinic. Providers also can syndicate these data to partners, health plans, and online to enable consistent clinician data wherever patients may seek care.	Kyruus and Providence have been working together since 2014. Kyruus pulled together disparate clinician data from multiple partners in Providence's Boeing ACO and delivered a call center solution and a digital search and match API that powers the Providence/ Swedish Boeing ACO website.	Since investing in Kyruus in August 2015, Providence Ventures has experienced higher conversion on appointments through more accurate matching of patients to providers. Providence has rolled the solution out across 15,000 employed and affiliated clinicians.

Partners Healthcare Innovation (Cambridge, Mass.), Cleveland Clinic Innovations, the Entrepreneurship Center (University of California, San Francisco), and Ochsner Medical Center (Jefferson, La.) have adopted the innovation center concept to internally and externally transfer technology successes to the market. Coca-Cola’s “The Bridge” is a commercial example that targets new-technology startups, which can be incorporated into the corporation’s core business, although health care is but one of several market areas it invests in. Jim Rogers from Mayo Clinic says most of their investments are “monetizing their own inventions.” (See the exhibit on page 5.)

Roger Kitterman, head of the Partners Healthcare investment program confirmed, “We are currently spending most of our time with internally developed technologies and transferring those technologies to the market through separate companies.”

The advantage of innovation centers is that they can leverage internal resources and entrepreneurship—and can bring the generally conservative hospital and health system bureaucracy closer to the center of market innovation. Geisinger Health System (Danville, Pa.) nurtures investments for years, with seven companies in its current portfolio. Geisinger also is pursuing a strategic partnership in genomics with biotechnology company Regeneron, and it has entered a multiyear partnership with Merck to improve patient engagement and care delivery.

Bringing these new ideas to fruition takes time, patience, and political savvy. Interviewees caution that, given the long time frame required to bring new ideas to market in health care, leadership teams should be prepared to stick to their commitments and not walk away from promising projects that do not deliver immediate results.



Source: Mehlman, E., “Rise of the Accelerators: The Growth of Health System-based Investment and Innovation Programs,” *Futurescan 2016-2021: Healthcare Trends and Implications*, Society for Healthcare Strategy & Market Development, 2016.

Pooled fund investments. These types of investments offer the opportunity to spread risk across a portfolio of companies while not being tied to the performance of any single investment. Many investment advisers already may have selected such a “fund of funds” approach for a portion of the provider system investment portfolio, because minimum initial resources are needed and there is exposure to numerous companies. Third-party funds attract investment from many major provider systems. A potential downside for these fund investors is that they don’t control the investment decisions, and the fund’s investments may not necessarily enhance the investors’ strategic objectives or brands.

Strategic investments and coinvestments. Health system venture funds are increasingly making direct investments in healthcare IT and services companies. Dignity Health, headquartered in the San Francisco Bay area, has a \$50 million draw from its treasury for innovation investment—innovation being one of the system’s five top strategic priorities.

“We have a variety of innovation strategies, from harvesting and marketing internal intellectual property, to direct and co-investment, and even new company creation,” says Richard Roth, chief strategic innovation officer at Dignity Health. “But what ties it together is a purposeful focus on implementation. At the end of the day we need to use our time and talent making sure innovations are providing value in the real world and at scale. We have a reputation for scaling innovation rather than piloting start-ups. We only invest in companies we are working with, who have clinical and operational success, and are looking to scale.”

Direct investments have the greatest upside potential, but there is also greater risk because these investments put a premium on internal execution and management expertise. With this

level of risk, some organizations choose to focus their investments in early- or mid-stage companies, where they are committed to establishing a strategic relationship.

The Importance of Goal Alignment

Almost all of the organizations interviewed concurred with the view that alignment of corporate goals with investment goals is a critical success factor. This alignment will include developing an investment approach that effectively stays within the framework of an organization’s overall business strategy. Important steps include determining the organization’s risk tolerance and deciding what stage of startup investing is best for the organization.^b Other important considerations that should be assessed include:

- > The need for liquidity compared with the strategic impact
- > The resources required and the potential cultural conflicts that could arise from the use of those resources
- > The reporting relationship of the unit within the organization
- > The organization’s readiness (or tolerance) for innovation

Interviewees stressed the importance of developing organizational consensus on how the investment and patients’ care agendas fit together, especially because real innovation comes from people on the ground far away from the investment arena. A few pointed out the challenges of managing the compensation conflicts that may exist between department heads paid to meet the annual budget, and the pay scale of the venture capital marketplace. One interviewee noted that offering competitive compensation to attract and retain talented industry professionals to lead an

b. Mehlman, E., *FutureScan 2016-2021: Healthcare Trends and Implications*, Society for Healthcare Strategy & Market Development, 2016.

investing program is a significant management challenge facing any provider venture capital program.

Other Critical Success Factors: A Culture of Innovation and Focus on Implementation

To succeed in today's healthcare market, health systems must be able to cycle rapidly through the planning and development of new programs and to manage a pipeline of initiatives aimed at meeting market needs—some of which may be short lived. A focus on implementation is also critical. "Introducing change in a healthcare delivery system is 20 percent about the technology and 80 percent about the implementation," says Nina Nashif, CEO of Healthbox.

A corporate venture program can thrive only if its parent organization has effectively fostered an experimental culture that is reasonably tolerant of failure, understanding that a significant fraction of new deals may not make it past the first or second round of funding. Even then, adoption to scale is also fraught with challenges given these time and complexity issues.

Organizational Readiness Safeguards

Interview results showed some consistency in the use of corporate venture capital as a tool to promote innovation. Within a provider's broader corporate strategy, a venture capital program provides a means of pushing the envelope in areas such as consumer engagement, alternative delivery methods (e.g., telehealth and data analytics supporting population health management), and alternative payment schemes or programs to further expand outpatient delivery of care.

Regardless of the goals of the venturing program, interview results suggested that health systems require a consistent framework for evaluating organizational readiness to successfully launch

and get the benefits from a corporate venture program. This framework should include, in the very least, the following questions:

- > Are our corporate and investment goals in sync?
- > Is there a balance between capital appreciation goals and the opportunities for innovation?
- > Is there a plan for harvesting and disseminating information from these investments?
- > Is leadership ready to stick to our investment commitments for the long haul?
- > Is there a process defined to identify champions for new investment opportunities and plans to help them succeed?
- > Do we have an incentive program that will motivate and retain the best investment staff?

As a final consideration, provider investors should recognize the need for a knowledge-transfer plan. Knowledge transfer will not occur automatically, even with investment successes. Learning from a startup can be as important as making the deal. And because few individual investments can move the needle much on corporate financial returns, harvesting the knowledge often may prove to be the primary reason for making the investment at all.

"Our challenge isn't finding great opportunities," said Nickolas Mark, director of business development at Intermountain Healthcare.

"Its prioritizing these opportunities against our strategic focus areas. Long-term investing requires us to consider both strategic and financial yield in conjunction with what it would take to potentially realize enterprisewide adoption."

Ultimately, an organization can enhance its ability and interest in corporate venturing by taking three additional steps:

- > Define what role activity should play in promoting innovation within the organization.

- > Determine all the constituents that should or could be involved, and how their involvement should be managed.
- > Describe the end results that the organization wants to achieve from such an endeavor, and ensure all constituents are motivated to do their part in achieving those results.

For organizations opting to use corporate venturing to enhance and possibly drive their innovation activities, one final point bears emphasis: The best rationale for such an effort will likely be to achieve the strategic benefits rather than to obtain a financial return. ■

About the authors

**Mary Jo Potter**

is senior advisor, BDC Advisors, LLC, San Francisco, and a member of HFMA's Northern California Chapter (maryjo.potter@bdcadvisors.com).
Twitter: @mjp9

**Rick Wesslund**

is founder and chairman of BDC Advisors, LLC, Miami; founder and CEO of The Leadership Institute, San Francisco; and a member of HFMA's Florida Chapter (rick.wesslund@bdcadvisors.com).

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